

Department of Mechano-Micro Engineering, Interdisciplinary Graduate School of Science and Engineering Graduated in September 2017

Hitoshi Yoshiki

1. Please share your profile and career options.

As an undergraduate, I majored in mechanical engineering with a biomedical minor. My Ph.D. research project was to develop a novel medical device, which applied compressible flow control techniques. My research was a liaison project with medical doctors at Tokyo Medical and Dental University.

I was also an intern at GE Healthcare Japan for six months for my Off-campus Projects, which was an AGL program, where I worked on a new business creation with vital sensor devices. After earning my Ph.D., I now work at a US-based consulting firm, which specializes in the pharmaceutical and medical device industry.

2. Why did you choose to participate in AGL?

I believe most of the healthcare labor force will be superseded by machines. However, I assume science and technology alone won't make this happen. It will take a few nerds who prefer robotics or medication and passionate MDs decades to realize this transformation.

The objective for my Ph.D. thesis was to learn how to create and validate the value of a new medical device. For me, AGL was the place to learn how to share new technologies with society and how to behave as a leader. Additionally, AGL offered appealing opportunities to me as a student that would also be appealing to recruiters at global companies. That is, AGL helped build my resume so that I could find employment after earning my Ph.D.

3. What are your fondest experiences in AGL?

The spring semester of my 3rd year of grad school was the toughest but most exciting. I was in charge of several projects: a Ph.D. study, a vital-sensing business development project in AGL, and a liaison project with a firm and AGL students. I had to manage all the communications and tasks while I made steady progress in my main field of expertise. The experiences and outcomes during this term instilled a strong self-confidence.

4. How did AGL impact you?

I became more conscious of my colleagues' performances for better outcomes. When I joined AGL, I was often considered a selfish and arrogant person. However, failures and unpleasant outcomes of projects in my early days in AGL taught me that I had a lot of room to grow to become a better leader. Through trial and reflection, I began to improve my leadership skills at AGL by asking a simple question, 'How can I maximize the team's outcome?' Eventually, I was able to manage several teams successfully, realizing better outcomes and opportunities than I imagined. I would say participating in AGL immensely improved my leadership ability.

5. What are your career plans?

My manager recently informed me about an opportunity to help launch a medical device team in APAC, but the headquarters in the US suspended the plan because there was no one with such a specialty in APAC. However, with my Ph.D. in medicalrelated engineering and experience at GE, I'm an appealing candidate to lead the new division. Currently, I do not have a firm idea about the next step in my next career. Strategic business creation jobs in pharma or medical device companies are open for ex-consultants. Thus, this could be my next step. However, I am currently working hard to implement more sophisticated medical devices with my vision.

6. Do you have any advice for someone who strives to be a global leader?

Pitching your vision attracts eventual opportunities. You may not be sure, but I'm sure. Never be afraid of success or failure. Every critical comment and discussion will refine your idea. The main obstacle is your readiness for a once-in-a-life opportunity. If you want to take a leading role, you should learn what your leadership is, how you perform, and why you are a fit person.

I hope you find colleagues and mentors who help you refine and realize your visions and ideas. Collaborative challenges will make you better. For me, AGL was the place where I learned to be a global leader.

Other Activities

Enrollment Ceremony 2017.9.22

The Academy for Global Leadership celebrated its 2016 enrollment ceremony on Friday, September 22, 2017 at Tokyo Tech Ookayama Campus Ishikawadai Bldg. 3.

This year, AGL welcomed seven students from Tokyo Tech and two students and eight participants from affiliate Hitotsubashi University. Each student received a letter of acceptance to the AGL from Director Isao Satoh. They renewed their resolution to learn leadership through Dojo programs and Off-campus Projects to become true global leaders.



The FD Training of the Academy for Global Leadership was held on Friday, December 22, 2017 at Tokyo Tech Ookayama Campus West Bldg. 9. Participants exchanged their vision for the final year of the program. The training with a great success.





D	ate	
April	4,6,10	Briefing for Enrollment to the A
May	22	Orientation for AGL Screening O
	23	Debrief Session for 2016 AGL (
June	1	Opening recruitment of 2017 A
July	10	Application deadline of 2017 AC
	13~21	Saito Dojo "Training at Steir
August	10~12	AGL Screening Camp 2017
September	1	Announcement of Selection Res
	7	Orientation meeting for 2017 A
	22	Enrollment Ceremony for 2017
	28~30	Program for Leading Graduate S
October	20~22	Program for Leading Graduate
	28~29	Yamada Dojo "d.school com
October 9~December 17		Yamada Dojo "Programming
December	2~3	ICS/AGL Special Seminar "Stanf
	22	Faculty Development · Advisory
January	30	Program for Leading Graduate S
February	18	Matsuki Dojo "Symposium on So
March	7~17	Matsuki Dojo "Training in Vi

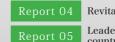
AGL Activity Report in academic year 2017

It's been a while since the last issue. Here we report the activities of the Academy for Global Leadership (AGL) for academic year 2017. Since its launch in 2011, AGL has welcomed over 120 students, including some from Hitotsubashi University. Eight have completed all the courses and begun their careers. Another 17 students joined AGL as seventh-stage students in 2017. The education system at AGL cultivates students' expertise to be outstanding doctoral students at their respective universities, graduate schools, or fields (faculties/departments), while simultaneously providing students opportunities to collaborate with others regardless of fields of specialization, personalities, and cultural differences at each Dojo. AGL also creates a tailor-made plan according to students' career plans through Off-campus Projects. AGL's goals for students are that they contribute to society by utilizing their outstanding expertise, foster the spirit and leadership to tackle complex social challenges by combining their expertise with that of others, and discuss how they can build a system that will create new values in a more sophisticated manner. This issue introduces some of the students' activities toward these goals and how the AGL activities are viewed by alumni.

AGL continues to improve its education based on feedback from our alumni, advisory board, external evaluation committee, and internal instructors through the Faculty Development (FD) Training. We continue to utilize the knowledge gained from our experiences to improve the graduate school education system. Please stay tuned for our achievements during our 8th year.

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Leadership for the international development scene in developing countries

Isao Satoh, Director of AGL

Voice of Graduates **Other Activities**



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Report 01 Yamada Dojo for Management and Society

d.school comes to Tokyo Tech 2017, October 28 (Sat) and 29 (Sun):

Three outstanding instructors were invited from d.school, Stanford University (United States) for this two-day workshop, which has been an annual event since 2014. d.school is the home of design thinking. During two action-packed days, AGL students along with 40 other students from Tokyo Tech and other universities participated to learn the mindset (Creative Confidence) to create new ideas (solutions) and develop the capacity to extract the reasons behind users' needs and task setting (User Centric). These concepts are the essence of design thinking as well as individual values and the core of the leadership function in the supportive and speedy learning environment of Silicon Valley. The workshop will be held again in 2018.

Voices of Participants

- . The workshop gave me an opportunity to pitch ideas in a manner that I'd never thought of. It was reassuring that all the research and business start-up processes require a common approach. (2017 AGL student)
- As we empathize with one another, ideas expand. This prevents products and services from being made for self-righteous reasons. This workshop taught me that giving an idea an actual shape for its function (as a prototype) is fun and such



prototype should be a strong weapon to make others understand value of the ideas. (2016 AGL student)

Programming Bootcamp (6 sessions from October to December)

Students planned and ran all six sessions of the workshop during a two-month course. The intention was to develop a "transitionable web site" with support from GuildWorks, a professional group on web development. Students studied languages, codes, and development environments with an application frame work of "Ruby-On-Rails" in teams of two to four students. The final round of this workshop was "3-day camp" in Fuchu. During the 3 days, students developed and completed the transitionable web site by having support from professionals worked alongside students. Acquiring knowledge on code was important but coming up with ideas for services, setting tasks for development, and designing the screen in a user-friendly way were more important.

Voices of Participants

- \cdot It was interesting to see that the codes we embedded made the web move. That feeling accelerated the development. We were able to try more functions than expected. It was a great opportunity to continue to actualize my ideas on the web. (2014 AGL student)
- Because professionals were there with me, I received advice on the challenges with respect to technical aspects and running a web service. Thanks to that, a beginner like me was able to build a web page by myself. This kind of intensive program is rare, and only AGL could made this happen. (2017 AGL-Hitotsubashi student)



Matsuki Dojo for Management and Society Report 02

Training in Vietnam

In our global society, which is expanding in a rapid but unruly manner, the next generation of leaders may face unprecedented challenges. Closer communications and a deeper mutual understanding with people and organizations in Asia will be crucial in resolving these challenges. The Matsuki Dojo will organize its third training in Vietnam in March. We will learn about the economy in Vietnam and how Japanese companies are advancing in Hanoi by engaging in a social survey with students of Ho Chi Minh City University of Science (HCMUNS) and reporting the results. Currently, six of the seventh stage AGL students (two from Tokyo Tech, four from Hitotsubashi) are preparing for the program with the HCMUNS students.

Participants' Voice

During the training in Vietnam last year, we engaged in group work with AGL and HCMUNS students as well as visited three Japanese organizations in Vietnam. In the group work, we set the theme as "Proposing Solutions for the Sustainable Development of Vietnam" by ourselves and worked on problems of the environment, education, employment of foreigners, and employment of the locals in four groups. All groups were able to understand the unique personality of Vietnamese students, engage in activities based on mutual trust, and propose solutions. We are still in touch with the



Vietnamese students. During the field visits, we visited Takashimaya, JETRO, and JICA, where we learned about the background of why they came to Vietnam and received advice on key factors when doing business overseas. Although all three organizations have different missions and markets, they all indicated that the key factor was to understand the cultural background of Vietnam while utilizing their experiences in Japan to build equal and healthy relationships with local customers and workers. (2016 AGL student)

Report03 Saito Dojo for Science and Engineering

Training at Steinbeis Program

The training is a joint program that is held annually in July between the Tokyo University of Agriculture and Technology and Steinbeis University in Germany. Business students from Steinbeis University and technology students from Tokyo University of Agriculture and Technology engaged in consultations on the policies for small- and medium-sized Japanese companies entering overseas markets. The ten-day training included a field trip to Nissan and other companies as well as a tour of Odawara city. About 70 people, including four AGL students, some from Yokohama National University, and 40 from Germany, participated in this year's training.

Voices of Participants

We made good friends with the German students and had a fun. The training was a great opportunity for me to learn about group work in an international setting. Prior to the training, we analyzed the strength of products made by small- and medium-sized companies that we consult with and the market to leverage the products and to determine broad ideas about the direction the training should take. Once the training actually started, we could only watch and analyze how German students did their group work. The German students took control of the discussion. As a result, we repeated the



same discussion that we already verified among Japanese students and wasted a lot of time. This reduced the productivity. We ended up focusing on the format of the presentation but failed to unify our message or determine the facts to be conveyed. It was a good learning experience. We did not interject to correct the discussion flow as we lacked a sense of responsibility for what the group could offer. (2016 AGL student)

Period	Project
May-July	Learning multi-discipline project planning and n
May-August	Revitalizing communication in an office environ
June-August	Survey on the current status of academic start
June-September	Estimate survey and leadership on commodity
June-November	Awareness survey on the value of basic res United States
July-December	Learning leadership in the industry-academia project in Germany
August-February	Leadership in multinational projects
September-December	Leadership for the international developme countries
September-February	Development of new detector for nucleus rese
October-January	Learning business models of a venture compa- supporting equipment
November-January	Pioneering new business

Revitalizing communication in an office environment

For 13 weeks (May 8 to August 4, 2017), I participated in Off-campus Projects at Takenaka Research and Development (R&D) Institute. This institute is located in the Inzai-city, Chiba prefecture, and I stayed at the institute dormitory. The application process began in January 2017, and I was accepted after an interview in February.

My research focused on new technology development for construction business strategies after the Tokyo Olympic Games. I created a hypothesis with an institute researcher, but I developed my research plan, practiced the measurements, analyzed the collected data, and presented my results to the institute member on the final day.

Takenaka R&D Institute conducts research with experts in diverse fields such as biology and informatics in order to improve not only how to construct buildings but also how to provide quality indoor environments. The R&D department is a very innovative environment, and I found those works very interesting. I also noticed that the role of the institute is not only to produce outstanding research results, but also to empower researchers to establish technology to maintain attractiveness of Takenaka Corporation in the future. I learned to appreciate the communication skills and management abilities of the researchers. These were vital to collaborate with universities and manufacturers when I attended meetings outside the institute. Ph.D. holders must be able to advocate what they want to do. I believe the personal ability raises the value of Ph.D. holders.

My research theme was not directly in my specialty field, but I actively responded to this different field and enthusiastically worked on one issue. In the future I hope to establish a career that can see the construction industry and society from a wider perspective. I was able to recognize the architectural institute, which is a private company, as one future option. Hiroko Shimokawa, 2nd-year doctoral student, Department of Architecture and Building Engineering,

Leadership for the international development scene in developing countries

As I was applying for Off-campus Projects, I wanted to learn leadership skills required for international cooperative projects. My wish came true, and I had opportunity to participate in an internship at Mongolia National University of Education (MNUE). I worked on a project aimed at introducing ICT to local lower secondary education in rural Mongolia. My roles in the project were to participate in teacher training events and develop web-based interactive teacher training materials. My goals were to learn important skills, to understand the needs of local teachers, and to collaborate with professionals in the project team.

For the teacher training, I recorded teachers' comments about the teacher training materials and collected information about the local I learned that in an international development project, researchers have many roles from investigating, analyzing, and sharing the local

educational condition. At the site where time and resources were limited, the goal of the survey and detailed meaning of terms had to be understood and shared among the team members in advance to conduct the planned surveys. Preparing a summary and sharing the findings from the local activities with other project members were also insightful activities. As for the development of interactive teacher training materials, I initially had trouble gaining the support of the MNUE professors. However, after demonstrating my commitment to the development activities and sharing information with the professors, I received the necessary support to complete the interactive materials. conditions. This epiphany encourages my research activities now. Moreover, I feel confident about the successful experience where I received support of many people to accomplish a mission in a limited timeframe. The experiences in Off-campus Projects meant a lot to me. I plan to utilize not only my findings but also the gained knowledge to achieve my future goal of proposing and implementing local development projects for sustainable development



Off-campus Projects

	Host
nanagement in Germany	University of Mainz, Germany
ment	Major construction company in Japan
ups in the United States	University of Washington, United States
flow methods	Cabinet Office, Japan
earch in Japan and the	California Institute of Technology, United States
a collaborative research	Fritz Haber Institute, Germany
	Software company in France
nt scene in developing	Mongolian State University of Education
arch	Lawrence Berkeley National Laboratory, United States
ny manufacturing sports	Venture company manufacturing sports equipment in Japan
	Major glass manufacturer in Japan



School of Environment and Society

Yuji Hirai, 2nd-year doctoral student, Department of Transdisciplinary Science and Engineering, School of Environment and Society